

CLAIMS

What is claimed is:

- 1 1. A method comprising:
 - 2 receiving a line of text, the line of text having a set of ordered characters;
 - 3 flipping the characters of the line of text about a display axis;
 - 4 identifying a set of runs of foreign characters in the line of text; and
 - 5 flipping the characters of the runs of the set of runs of foreign characters within
 - 6 each run of foreign characters.

- 1 2. The method of claim 1 further comprising:
 - 2 receiving a block of text;
 - 3 breaking the block of text into a set of lines of text; and
 - 4 performing the receiving the line of text, flipping the characters of the line,
 - 5 identifying and flipping the characters of the runs for each line of text of the set of lines
 - 6 of text.

- 1 3. The method of claim 2 further comprising:
 - 2 passing the line of text to a native operating system for display.

1 4. The method of claim 1 wherein:
2 the text is received from an application with no capability of handling bi-
3 directional text.

1 5. The method of claim 1 wherein:
2 the foreign text is defined as text which should be displayed in a left-to-right
3 fashion.

1 6. The method of claim 1 wherein:
2 the foreign text is defined as text which should be displayed in a right-to-left
3 fashion.

1 7. A machine-readable medium embodying instructions, which, when executed
2 by a processor, cause the processor to perform a method, the method comprising:
3 receiving a line of text, the line of text having a set of ordered characters;
4 flipping the characters of the line of text about a display axis;
5 identifying a set of runs of foreign characters in the line of text; and
6 flipping the characters of the runs of the set of runs of foreign characters within
7 each run of foreign characters.

1 8. The machine readable medium of claim 7 further embodying instructions
2 which when executed by a processor, cause the processor to perform the method
3 further comprising:
4 receiving a block of text;
5 breaking the block of text into a set of lines of text; and
6 performing the receiving the line of text, flipping the characters of the line,
7 identifying and flipping the characters of the runs for each line of text of the set of lines
8 of text.

1 9. The machine readable medium of claim 7 further embodying instructions
2 which when executed by a processor, cause the processor to perform the method
3 further comprising:
4 passing the line of text to a native operating system for display.

1 10. A processor which executes instructions causing the processor to perform
2 the method comprising:
3 receiving a line of text, the line of text having a set of ordered characters;
4 flipping the characters of the line of text about a display axis;
5 identifying a set of runs of foreign characters in the line of text; and
6 flipping the characters of the runs of the set of runs of foreign characters within
7 each run of foreign characters.

1 11. The processor of claim 10 wherein the method further comprises:
2 receiving a block of text;
3 breaking the block of text into a set of lines of text; and
4 performing the receiving the line of text, flipping the characters of the line,
5 identifying and flipping the characters of the runs for each line of text of the set of lines
6 of text.

1 12. The processor of claim 11 wherein the method further comprises:

2 passing the line of text to a native operating system for display.

1 13. A server configured to send instructions to a remote client, to configure the
2 remote client to perform the method comprising:
3 receiving a line of text, the line of text having a set of ordered characters;
4 flipping the characters of the line of text about a display axis;
5 identifying a set of runs of foreign characters in the line of text; and
6 flipping the characters of the runs of the set of runs of foreign characters within
7 each run of foreign characters.

1 14. The server of claim 13 wherein the server is configured to send instructions
2 to the client to configure the client to perform the method further comprising:
3 receiving a block of text;
4 breaking the block of text into a set of lines of text; and
5 performing the receiving the line of text, flipping the characters of the line,
6 identifying and flipping the characters of the runs for each line of text of the set of lines
7 of text.

1 15. The server of claim 14 wherein the server is configured to send instructions
2 to the client to configure the client to perform the method further comprising:
3 passing the line of text to a native operating system for display.

1 16. The server of claim 15 wherein the client is a remote mobile device.

1 17. The server of claim 15 wherein the client is a wireless device.

1 18. A server configured to download information to a client, the information
2 including a set of instructions, the instructions for execution by a processor of the client,
3 the set of instructions causing the processor to perform a method, the method
4 comprising:

5 receiving a line of text, the line of text having a set of ordered characters;
6 flipping the characters of the line of text about a display axis;
7 identifying a set of runs of foreign characters in the line of text; and
8 flipping the characters of the runs of the set of runs of foreign characters within
9 each run of foreign characters.

1 19. The server of claim 18 wherein the set of instructions cause the processor to
2 perform the method further comprising:

3 receiving a block of text;
4 breaking the block of text into a set of lines of text; and
5 performing the receiving the line of text, flipping the characters of the line,
6 identifying and flipping the characters of the runs for each line of text of the set of lines
7 of text.

1 20. The server of claim 19 wherein the set of instructions cause the processor to
2 perform the method further comprising:

3 passing the line of text to a native operating system for display.

1 21. The server of claim 20 wherein the client is a remote mobile device.

1 22. The server of claim 20 wherein the client is a wireless device.

1 23. A method comprising:

2 receiving a line of text, the line of text having a set of ordered characters;

3 generating a set of runs within the line of text;

4 flipping a location and an orientation of each run of the set of runs about an axis
5 of a display; and

6 identifying a set of runs of foreign characters within the line of text.

1 24. The method of claim 23 further comprising:

2 flipping the orientation of each run of foreign characters within the run of foreign
3 characters.

1 25. The method of claim 23 further comprising:

2 rendering each run of the set of runs, except for the runs of foreign characters, in
3 a first orientation; and
4 rendering each run of foreign characters in a second orientation.

1 26. The method of claim 25 further comprising:
2 receiving a block of text having a set of ordered characters and a location; and
3 breaking the block of text into a set of lines of text, each line having a set of
4 ordered characters and a location.

1 27. The method of claim 26 wherein:
2 the text is received from an application with no capability of handling bi-
3 directional text.

1 28. The method of claim 27 wherein:
2 the foreign text is defined as text which should be displayed in a left-to-right
3 fashion.

1 29. The method of claim 27 wherein:
2 the foreign text is defined as text which should be displayed in a right-to-left
3 fashion.

1 30. A machine-readable medium embodying instructions, which, when executed
2 by a processor, cause the processor to perform a method, the method comprising:
3 receiving a line of text, the line of text having a set of ordered characters;
4 generating a set of runs within the line of text;
5 flipping a location and an orientation of each run of the set of runs about an axis
6 of a display; and
7 identifying a set of runs of foreign characters within the line of text.

1 31. The machine readable medium of claim 30 further embodying instructions
2 which when executed by a processor, cause the processor to perform the method
3 further comprising:
4 flipping the orientation of each run of foreign characters within the run of foreign
5 characters.

1 32. The machine readable medium of claim 30 further embodying instructions
2 which when executed by a processor, cause the processor to perform the method
3 further comprising:
4 rendering each run of the set of runs, except for the runs of foreign characters, in
5 a first orientation; and
6 rendering each run of foreign characters in a second orientation.

1 33. The machine readable medium of claim 32 further embodying instructions
2 which when executed by a processor, cause the processor to perform the method
3 further comprising:

4 receiving a block of text having a set of ordered characters and a location; and
5 breaking the block of text into a set of lines of text, each line having a set of
6 ordered characters and a location.

1 34. A processor which executes instructions causing the processor to perform
2 the method comprising:

3 receiving a line of text, the line of text having a set of ordered characters;
4 generating a set of runs within the line of text;
5 flipping a location and an orientation of each run of the set of runs about an axis
6 of a display; and
7 identifying a set of runs of foreign characters within the line of text.

1 35. The processor of claim 34 wherein the method further comprises:
2 flipping the orientation of each run of foreign characters within the run of foreign
3 characters.

1 36. The processor of claim 34 wherein the method further comprises:
2 rendering each run of the set of runs, except for the runs of foreign characters, in
3 a first orientation; and
4 rendering each run of foreign characters in a second orientation.

1 37. The processor of claim 36 wherein the method further comprises:
2 receiving a block of text having a set of ordered characters and a location; and
3 breaking the block of text into a set of lines of text, each line having a set of
4 ordered characters and a location.

1 38. A server configured to send instructions to a remote client, to configure the
2 remote client to perform the method comprising:
3 receiving a line of text, the line of text having a set of ordered characters;
4 generating a set of runs within the line of text;
5 flipping a location and an orientation of each run of the set of runs about an axis
6 of a display; and
7 identifying a set of runs of foreign characters within the line of text.

1 39. The server of claim 38 wherein the server is configured to send instructions
2 to the client to configure the client to perform the method further comprising:
3 flipping the orientation of each run of foreign characters within the run of foreign
4 characters.

1 40. The server of claim 38 wherein the server is configured to send instructions
2 to the client to configure the client to perform the method further comprising:
3 rendering each run of the set of runs, except for the runs of foreign characters, in
4 a first orientation; and
5 rendering each run of foreign characters in a second orientation.

1 41. The server of claim 40 wherein the server is configured to send instructions
2 to the client to configure the client to perform the method further comprising:
3 receiving a block of text having a set of ordered characters and a location; and
4 breaking the block of text into a set of lines of text, each line having a set of
5 ordered characters and a location.

1 42. The server of claim 41 wherein the client is a remote mobile device.

1 43. The server of claim 41 wherein the client is a wireless device.

1 44. A server configured to download information to a client, the information
2 including a set of instructions, the instructions for execution by a processor of the client,
3 the set of instructions causing the processor to perform a method, the method
4 comprising:

5 receiving a line of text, the line of text having a set of ordered characters;
6 generating a set of runs within the line of text;
7 flipping a location and an orientation of each run of the set of runs about an axis
8 of a display; and
9 identifying a set of runs of foreign characters within the line of text.

1 45. The server of claim 44 wherein the set of instructions cause the processor to
2 perform the method further comprising:

3 flipping the orientation of each run of foreign characters within the run of foreign
4 characters.

1 46. The server of claim 44 wherein the set of instructions cause the processor to
2 perform the method further comprising:

3 rendering each run of the set of runs, except for the runs of foreign characters, in
4 a first orientation; and
5 rendering each run of foreign characters in a second orientation.

1 47. The server of claim 46 wherein the set of instructions cause the processor to
2 perform the method further comprising:

3 receiving a block of text having a set of ordered characters and a location; and
4 breaking the block of text into a set of lines of text, each line having a set of
5 ordered characters and a location.

1 48. The server of claim 47 wherein the client is a remote mobile device.

1 49. The server of claim 47 wherein the client is a wireless device.

1 50. A method comprising:

2 receiving a line of text, the line of text having a set of ordered characters;
3 flipping the characters of the line of text within the line of text about a center
4 vertical axis of a display;
5 identifying a set of runs of foreign characters in the line of text; and
6 flipping the characters within each run of foreign characters about a center
7 vertical axis of each run of foreign characters.

1 51. The method of claim 50 further comprising:
2 receiving a block of text;
3 breaking the block of text into a set of lines of text; and
4 performing the receiving the line of text, flipping the characters of the line,
5 identifying and flipping the characters of the runs for each line of text of the set of lines
6 of text.

